

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claim 3 is requested to be cancelled without prejudice or disclaimer.

Claims 1 and 4 are currently being amended.

Claims 12-14 are being added.

This amendment adds, changes and deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-2 and 4-14 are now pending in this application.

Claim 1 has been amended to recite: “the small passage group has a width corresponding to 20-40% of a total width of the cooling medium passage”. Support for this amendment can be found at least on pages 7 and 16 of the specification. Additionally, claims 1 and 4 have been amended to improve their readability. The amendments to improve the readability of claims 1 and 4 do not narrow their scope. New claims 12-14 have also been added. No new matter has been added.

Rejections under 35 U.S.C. §§ 102 and 103

Claims 1-6 stand rejected under 35 U.S.C. § 102 as being anticipated by WO 96/20382 to Haselden (hereafter “Haselden”). Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Haselden in view of U.S. Patent No. 5,366,004 to Garner et al. (hereafter “Garner”). Applicants respectfully traverse these rejections for at least the following reasons.

Independent claim 1 is directed to a heat exchanger comprising heat transfer tube elements having a flat passage allowing flow of a cooling medium therein, and a passage in at

least a section of the passage comprising a large passage and a small passage group disposed in parallel. The large passage is provided upstream to the core with respect to the direction of gas flow. The small passage group comprises a plurality of small passages provided downstream of the core with respect to the direction of gas flow, and has a width corresponding to 20-40% of a total width of the cooling medium passage. Haselden and Garner fail to suggest a small passage group, comprising a plurality of small passages, that has a width corresponding to 20-40% of a total width of the cooling medium passage, or the attendant advantages of this feature.

With respect to Haselden, the Office Action equates the subchannel 38b (Figure 3) or 48b (Figure 4) with the large passage, and the subchannels 36, 36a (Figure 3) or 46, 46a (Figure 4) with the small passages as claimed. Haselden, however, fails to disclose that the subchannels 36, 36a or 46, 46a have a width corresponding to 20-40% of a total width of any cooling medium passage. Thus, Haselden fails to anticipate claim 1 for at least this reason.

Moreover the width range as recited in claim 1 provides advantages not realized by Haselden. These advantages are specifically disclosed in the present specification on page 16 referring to Figure 16. The results of experiments for various widths conducted by the inventors is shown in Figure 16. Based on these experiments, a preferred width for the small passage group of 20-40% of the total width of the cooling medium passage was obtained. By contrast, Haselden is silent on the effect of the range of the widths of the subchannels 36 as compared to any total passage width.

The dependent claims, including withdrawn claims 7-10, all ultimately depend from claim 1, and are patentable for at least the same reasons as well as for further patentable features recited therein. For example, claim 2 requires that the small passage group is formed by disposing corrugated inner fins in the cooling medium. By contrast, in Haselden the subchannels 36, 36a or 46, 46a, which the Office Action equates with the small passages, are not formed by disposing corrugated inner fins in any cooling medium. As another example, new claims 12-14 recite features not suggested by Haselden.

Garner was cited for allegedly disclosing a catalyst on an outer fin, and fails to cure the deficiencies of Haselden.

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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